AMENDMENT

In the Claims

Please amend Claims 1-24 as shown below.

1. (currently amended) A signal processing method comprising the steps of:

receiving a signal having a level of distortion;

filtering the signal according to a filter parameter to reduce the level of distortion;

comparing the filtered signal to a reference;

generating a quantized signal, having at least two signal levels, based on the comparison;

detecting a first signal energy in a first frequency band ~~parameter~~ of each of the filtered signal and the quantized signal;

detecting ~~an~~ second signal energy in a second frequency band of each of the filtered signal and the quantized signal;

adjusting the filter parameter based on the first signal energy ~~parameter~~ of the filtered signal, the first signal energy ~~parameter~~ of the quantized signal, and at least one of the detected second signal energies; and

responsive to the adjusting step, further reducing the level of distortion.

2. (currently amended) The method of Claim 1, wherein ~~detecting the signal parameter comprises detecting a second energy in a frequency component of each of the filtered signal and the quantized signal~~ the first frequency band is above a frequency threshold and the second frequency band is below the frequency threshold.

3. (currently amended) The method of Claim 1, wherein:

the signal has a data rate; and

the first frequency band comprises frequencies greater than one half of the data rate; and

the second frequency band comprises frequencies less than one half of the data rate ~~detecting the signal parameter comprises detecting a second energy in a component of each of the filtered signal and the quantized signal, the component having a frequency higher than one half of the data rate~~.

4. (currently amended) The method of Claim 1, wherein:

the signal has a data rate; ~~and~~

detecting the first signal energy comprises detecting ~~the~~ energy in a first component in each of the filtered signal and the quantized signal, the first component having a frequency less than the data rate; and

detecting the second signal energy comprises detecting energy in a second component in each of the filtered signal and the quantized signal, the second component having a frequency greater than one half of the data rate.

5. (currently amended) The method of Claim 1, further comprising the steps of:

scaling the first detected signal energy ~~parameter~~ of the filtered signal based on the second detected energy ~~in~~ of the quantized signal; and

scaling the first detected signal ~~parameter~~ energy of the quantized signal based on the second detected energy ~~in~~ of the filtered signal.

6. (currently amended) The method of Claim 1, further comprising the steps of:

scaling the first detected signal energy ~~parameter~~ of the filtered signal based on the second detected energy ~~in~~ of the quantized signal;

scaling the first detected signal energy ~~parameter~~ of the quantized signal based on the second detected energy ~~in~~ of the filtered signal; and

comparing the scaled first detected signal energy ~~parameter~~ of the filtered signal to the scaled first detected signal energy ~~parameter~~ of the quantized signal, wherein

the adjusting step comprises adjusting the filter parameter based on the comparison.

7. (currently amended) A method for processing a communication signal having a data rate comprising the steps of:

applying a degree of equalization to the communication signal;

quantizing the equalized communication signal;

monitoring a parameter in each of the equalized communication signal and the quantized communication signal, the parameter having a frequency greater than one half of the data rate;

monitoring a low-frequency energy in at least one of the equalized communication signal and the quantized communication signal, the low-frequency energy having a frequency less than the data rate;

comparing the monitored parameter in the equalized communication signal to the monitored parameter in the quantized communication signal and compensating the comparison according to the monitored low-frequency energy in the at least one of the equalized communication signal and the quantized communication signal; and

adjusting the degree of equalization responsive to the comparing step.

8. (original) The method of Claim 7, wherein:

monitoring the low-frequency energy comprises determining a difference between the monitored low-frequency energy in the equalized communication signal and the monitored low-frequency energy in the quantized communication signal; and

the comparing step comprises comparing the monitored parameter in the equalized communication signal to the monitored parameter in the quantized communication signal and compensating the comparison according to the difference in the low-frequency energy.

9. (original) The method of Claim 7, wherein:

monitoring the low-frequency energy comprises:

monitoring the low-frequency energy in the equalized communication signal; and

monitoring the low-frequency energy in the quantized communication signal; and

the comparing step comprises:

scaling the monitored parameter in the equalized communication signal based on the monitored low-frequency energy in the quantized communication signal;

scaling the monitored parameter in the quantized communication signal based on the monitored low-frequency energy in the equalized communication signal; and

comparing the scaled parameter of the equalized communication signal to the scaled parameter of the quantized communication signal.

10. (original) The method of Claim 7, further comprising the steps of:

transmitting the communication signal through a medium;

causing a distortion of the communication signal with the medium; and

receiving the distorted communication signal from the medium, wherein the applying step comprises applying the degree of equalization to the received communication signal to correct the distortion.

11. (original) The method of Claim 7, wherein the parameter comprises edge energy.

12. (original) The method of Claim 7, wherein monitoring the parameter comprises detecting a power in a frequency component in each of the equalized communication signal and the quantized communication signal.

13. (original) The method of Claim 7, wherein monitoring the parameter comprises detecting a power in a high-frequency component in each of the equalized communication signal and the quantized communication signal, wherein the frequency of the high-frequency component is greater than one half of the data rate.

14. (original) The method of Claim 7, wherein quantizing the equalized communication signal comprises processing the equalized communication signal with a comparator.

15. (original) The method of Claim 7, wherein applying the degree of equalization to the communication signal comprises filtering the communication signal.

16. (original) The method of Claim 7, wherein applying the degree of equalization to the communication signal comprises processing the communication signal with a Bode equalizer.

17. (currently amended) A signal processing circuit comprising:

a filter for filtering a communication signal;

a comparator coupled to an output of the filter for comparing the communication signal to a reference; and

a control circuit coupled to the filter and the output of the filter and an output of the comparator, the control circuit adjusting the filter based on:

a first signal, obtained ~~a first frequency range of the communication signal sampled~~ at the filter output, comprising components of the communication signal in a first frequency range;

a second signal, obtained at ~~and~~ the comparator output, comprising components of the communication signal in a second frequency range; ~~and~~

a third signal, obtained ~~a second frequency range of the communication signal sampled~~ at the filter output, comprising components of the communication signal in a third frequency range; and

a fourth signal, obtained at the comparator output, comprising components of the communication signal in a fourth frequency range,

wherein the third frequency range is below the first frequency range and the fourth frequency range is below the second frequency range.

18. (original) The circuit of Claim 17, wherein the filter is operative to compensate for a distortion in the communication signal.

19. (currently amended) The circuit of Claim 17, wherein the filter comprises an equalizing filter, the first frequency range overlaps the second frequency range, and the third frequency range overlaps the fourth frequency range.

20. (currently amended) The circuit of Claim 17, wherein the control circuit comprises:

a first and a second high-pass filter, each passing electric signals with frequencies above a first frequency threshold and attenuating electric signals with frequencies below the first frequency threshold; and

a first and a second low-pass filter, each passing electric signals with frequencies below a second frequency threshold and attenuating electric signals with frequencies above the second frequency threshold, wherein the first high-pass filter passes the first signal, the second high-pass filter passes the second signal, the first low-pass filter passes the third signal, and the second low-pass filter passes the fourth signal.

21. (currently amended) The circuit of Claim 17, wherein the control circuit ~~is further operative to adjust the filter in response to a difference between a first edge energy of the communication signal at the filter output and a second edge energy of the communication signal at the comparator output~~ further comprises: a first detector for monitoring energy of the first signal; a second detector for monitoring energy of the second signal; a third detector for monitoring energy of the third signal; and a fourth detector for monitoring energy of the fourth signal, wherein the filter comprises an equalizing filter and the control circuit adjusts the equalizing filter based on the monitored energies of each of the first, second, third, and fourth detectors.

22. (original) The circuit of Claim 17, wherein the filter comprises a Bode equalizer.

23. (original) The circuit of Claim 17, wherein the control circuit is further operative to provide equalization to the communication signal by reducing a difference between an edge energy of the communication signal at the filter output and the edge energy of the communication signal at the comparator output.

24. (original) The circuit of Claim 17, wherein the comparator is further operative to quantize the communication signal.